

WHAT IS CLAIMED IS:

1. A method for referencing a data selection, from a collection of data, comprising:
creating a reference to the data selection;
creating an edge definition for the data selection comprising sufficient information to define at least two edges that bind the data selection; and
associating the edge definition with the reference.
2. The method of claim 1, wherein the reference comprises an annotation.
3. The method of claim 1, wherein associating the edge definition with the reference comprises creating an index for the reference and storing the edge definition with the index.
4. The method of claim 1, wherein the data selection comprises a discontinuous set of data points.
5. The method of claim 4, wherein creating the edge definition comprises:
partitioning the data selection into sections of contiguous data points; and
creating an edge definition for each section of contiguous data points, the edge definition for each section containing sufficient information to define one or more bounding edges of the corresponding section.
6. The method of claim 1, wherein the edge definition comprises a list of data points defining a horizontal edge and a vertical edge of the two-dimensional array, each data point specified by a row value and a column value.

7. The method of claim 1, wherein the edge definition comprises a list of row values and a list of column values, the lists combinable to generate a set of data points defining a horizontal edge.
8. The method of claim 1, wherein the collection of data comprises at least three dimensions.
9. The method of claim 8, wherein the data selection is bound by a surface of a sphere.
10. The method of claim 9, wherein the edge definition comprises a point of origin and a radius of the sphere.
11. A computer-readable medium containing a program which, when executed by a processor, performs operations comprising:
 - receiving a first selection of data spanning at least two columns and at least two rows of a two-dimensional collection of data; and
 - creating an edge definition for the first selection of data comprising sufficient information to define a horizontal edge spanning the at least two columns and a vertical edge spanning the at least two rows.
12. The computer-readable medium of claim 11, wherein:
 - the first selection of data comprises a discontinuous set of data points;
 - creating an edge definition for the first selection of data comprises partitioning the selection into sections of contiguous data points; and
 - the edge definition comprises sufficient information to define a horizontal edge and vertical edge of each section of contiguous data points.
13. The computer-readable medium of claim 11, wherein the operations further comprise:

creating an index for the first selection of data; and
storing the index with the edge definition in the edge definition table.

14. The computer-readable medium of claim 13, wherein the operations further comprise creating an annotation record comprising an annotation created for the first selection of data and the index.

15. The computer-readable medium of claim 13, wherein the operations further comprise:

receiving a request for annotations for a second selection of data;
determining if the second selection of data is contained, at least partially, within the first selection of data, based on the edge definition for the first selection of data; and
if so, retrieving the annotation created for the first selection of data, using the index created for the first selection of data and returning the annotation created for the first selection of data.

16. The computer-readable medium of claim 15, wherein the operations further comprise:

determining if the second selection of data is contained, at least partially, within other selections of data, based on corresponding edge definitions for the other selections of data; and
if so, retrieving annotations associated with the other selections of data, using indexes created for the other selections of data, and returning the annotations for the other selections of data.

17. An annotation system comprising:

an annotation database;
an edge definition table; and
an executable component configured to create an edge definition for a selection of data, the edge definition comprising sufficient information to define one or more

bounding edges of the selection of data, create an index for the selection of data, store the edge definition and index for the selection of data in the edge definition table, and store, in the annotation database, an annotation record comprising an annotation for the selection of data and the index.

18. The annotation system of claim 17, wherein the edge definition comprises sufficient information to define a three dimensional surface that contains the selection of data.

19. The annotation system of claim 18, wherein the edge definition comprises a point of origin and a radius of a sphere that contains the selection of data.

20. The annotation system of claim 17, wherein the executable component is configured to:

- receive, from an application program, a request for annotations associated with a selection of data specified in the request;

- obtain, from the edge definition table, indexes for edge definitions at least partially containing the selection of data specified in the request;

- retrieve annotations from the annotation database, using the indexes obtained;
- and

- return the annotations retrieved to the requesting application program.

21. The annotation system of claim 17, wherein:

- the selection of data spans at least two rows and two columns of data; and

- the edge definition for the selection of data comprises sufficient information to define a horizontal edge spanning the at least two columns and a vertical edge spanning the at least two rows.

22. The annotation system of claim 21, wherein the edge definition for the selection of data comprises data points along the horizontal and vertical edges, each data point defined by a row value and a column value.

23. The annotation system of claim 21, wherein the edge definition for the selection of data comprises a list of row values and a list of column values, combinable to generate data points along the horizontal and vertical edges of the data selection.

24. The annotation system of claim 21, wherein the executable component is further configured to:

detect a change to a collection of data within an area of data defined by a stored edge definition; and

provide an indication to a user of the change.

25. The annotation system of claim 24, wherein the change comprises at least one of an insertion of a row, a deletion of a row, an insertion of a column, or a deletion of a column.

26. The annotation system of claim 25, wherein the executable component is further configured to provide the user with the option of updating the stored edge definition to reflect the change.

27. The annotation system of claim 25, wherein the executable component is further configured to provide the user with the option of deleting an annotation associated with the stored edge definition.

28. The annotation system of claim 25, wherein the executable component is further configured to provide the user with the option of viewing an annotation associated with the stored edge definition.